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| OHLANDT, GREELEY, RUGGIERO & PERLE, LLP ONE LANDMARK SQUARE, 10TH FLOOR STAMFORD, CT 06901 | | | EXAMINER TUROCY, DAVID P | |
| | | | ART UNIT | PAPER NUMBER |

1762

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/511,315

Applicant(s)

MUND ET AL.

Examiner

David Turocy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 33-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22, 33-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/7/06 has been entered.

Response to Amendment

2. Applicant's amendments filed 8/7/06, have been fully considered and reviewed by the examiner. The examiner notes that amendments to claims 1, 3, 33, and 34. Currently claims 1-22 and 33-37 are pending in this application.

Response to Arguments

3. Applicant's arguments with respect to claims are directed to newly added limitations not present at the time of final rejection and therefore have been considered but are moot in view of the new ground(s) of rejection.

The examiner notes the process steps as claimed do not necessarily require sequential steps and therefore a process comprising the steps reads on the claimed invention.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6100202 by Lin et al, hereafter Lin in view of US Patent 4492717 by Pliskin.

Lin teaches a method for evaporation depositing a planarizing borosilicate glass on the surface of a metallic surface (figure 9, column 12). Lin fails to disclose using a borosilicate glass comprising aluminum oxide and alkali metal oxide components, however, Pliskin, teaching depositing a planarized glass on the surface of a circuit, discloses a borosilicate glass comprising aluminum oxide and alkali metal oxide components is known in the art to provide an appropriate planarized coating and therefore it would have been obvious to one of ordinary skill in the art to have selected borosilicate glass comprising aluminum oxide and alkali metal oxide components with a reasonable expectation of successfully providing a planarized surface. The prior art can be modified or combined to reject claims as prima facie obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375.

Claim 33: The glass is deposited on a metallic surface of the solid metal substrate (52a) (figure 8-9).

6. Claims 1, 3-6, 8-10, 12-15, 19-20, and 33-36 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6100202 by Lin et al, hereafter Lin in view of EP 03434052 by Batey et al, hereafter Batey and further in view of US Patent 4492717 by Pliskin.

Claim 1, 3: Lin teaches a method for providing a electronic device with source and drain (38a and 38b), discloses forming a negatively structures first coating (40) on the source and drain and then deposits a evaporation deposited glass coating (44) on the first coating, wherein the process includes reflowing to planarize (figures 4-9, column 12). Lin discloses partially removing both the first coating and the glass coating thereon (figure 7). Lin fails to disclose the source and drain are metal, however, Batey discloses metallic source and drains are known and suitable in the art (abstract) and therefore it would have been obvious to modify Lin to use metal source and drains because they are known in the art as operable. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Lin in view of Batey fails to disclose using a borosilicate glass comprising aluminum oxide and alkali metal oxide components, however, Pliskin, teaching depositing a planarized glass on the surface of a circuit, discloses a borosilicate glass comprising aluminum oxide and alkali metal oxide components is known in the art to provide an appropriate planarized coating and therefore it would have been obvious to one of ordinary skill in the art to have selected borosilicate glass comprising aluminum

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oxide and alkali metal oxide components with a reasonable expectation of successfully providing a planarized surface. The prior art can be modified or combined to reject claims as prima facie obvious as long as there is a reasonable expectation of success.

In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375.

As to the limitation of hermetic coating, the prior art and the present claims, reflected by claim 26, teach all the same process steps and thus the results obtained by applicants process must necessarily be the same as those obtained by the prior art. Therefore by depositing a borosilicate glass it must necessarily result in a hermetic coating. Either 1) the applicant and the prior art have different definitions for depositing, or 2) the applicant is using other process steps or parameters that are not shown in the claims.

Claim 4: Lin discloses uncovering regions of the metallic surface at are to be coated (figure 6).

Claim 5: Lin discloses applying a resist coating (46) (Figure 6).

Claim 6: Lin discloses using a resist mask doing so inherently means that the coated resist sections of the hermetic coating will be removed (figure 6).

Claim 8: The process of Lin will partial uncover the first coating, as a negatively structured coating (Figure 6).

Claim 9: Lin discloses reflow to planarize (column 12, lines 40-50).

Claim 10: The process of Lin may comprise polishing (Column 10, line 55).

Claim 12: Lin discloses depositing 2 evaporated glass (figure 9).

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Claim 13: Such a modification would be within the skill of one ordinary in the art to provide the desired properties associated with each subsequently deposited glass layer.

Claim 14: Lin discloses a glass layer within the range as claimed (Column 12, lines 15-17).

Claim 15: The evaporated coating layer will have a composition that will inherently be varied while being deposited because it will not provide a complete homogenous coating.

Claims 19 and 20: The evaporated glass is structured by etching after being deposited (figures, Column 12, lines 40-50).

Claims 33 and 34: Giving the term "solid metal substrate" its broadest reasonable interpretation, the glass is deposited on a metallic surface of the solid metal substrate (52a) (figure 8-9).

Claims 35 and 36: These claims are rejected for the same reasons as claims 4 and 6 above.

7. Claims 1, 3-7, 11-16, 22, and 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wienand et al. (US Patent Application Publication 2002/0084885) in view of US Patent 4492717 by Pliskin

Claim 1, Wienand et al. discloses a process for producing a coated substrate having at least one metallic surface, comprising: depositing an evaporation-coating glass in structured form at least on the at least one metallic surface (paragraph 26, paragraphs 49-54). Wienand discloses applying a glass layer comprising aluminum

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oxide and silicate, however, fails to disclose providing a borosilicate glass comprising aluminum oxide and alkali metal oxide components; however, Pliskin, teaching depositing a glass on the surface, discloses a borosilicate glass comprising aluminum oxide and alkali metal oxide components is known in the art to provide an appropriate coating and therefore it would have been obvious to one of ordinary skill in the art to have selected borosilicate glass comprising aluminum oxide and alkali metal oxide components with a reasonable expectation of successfully providing a glass coated surface. The prior art can be modified or combined to reject claims as prima facie obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375.

Claim 3, Wienand et al. discloses a process for producing a coated substrate having at least one metallic surface, comprising: producing at least one negatively structured first coating on the metallic surface (paragraph 26, paragraphs 49-54); depositing a hermetic evaporation coating glass layer on the first coating (paragraph 13); and at least partially removing the at least one negatively structured first coating and the hermetic evaporation coating glass layer thereon (paragraphs 49-54). While it is not explicitly stated it is inherent that structuring a substrate with a resist mask over the substrate involves removing the resist mask layer after deposition as is shown by the lack of a mask being present in figure 1.

Claim 4, Wienand et al. discloses patterning the substrate with a resist mask doing so involves uncovering portions of the metallic substrate that are to be coated (paragraph 50).

Claim 5, Wienand et al. discloses coating with a resist (paragraph 50).

Claim 6, Wienand et al. discloses using a resist mask doing so inherently means that the coated resist sections of the hermetic coating will be removed (paragraph 50, figure 1).

Claims 7 and 37: The reference fails to disclose the claimed relative thickness between the two layers, however, it is the examiners position that the determination of the thickness of coating layers is a result effective variable. Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the coating thickness used in the process, through routine experimentation, to substrate with the desired properties associated with both layers.

Claim 11, Wienand et al. discloses the deposition can be performed through a mask (paragraph 50).

Claim 12, Wienand et al. discloses that the coating can consist of two layers (paragraph 24).

Claim 13, Wienand et al. discloses that the two layers are different compositions (table 2).

Claim 14, Wienand et al. discloses the thickness of the films 0.2-10 μm (paragraph 45).

Claim 15, the hermetic coating can be 2 different layers which would have a different composition (table 2).

Claim 16: Wienand et al. in view of Pliskin discloses all of the features of this claim as discussed above except it does not disclose evaporating coating material from at least two sources. It does teach however depositing multiple oxides to the surface to form the desired glass. To deposit more than one oxide at the same time it would be

obvious to one of ordinary skill in the art to use more than one source for the coating material as the materials have different material properties and would need to be heated to different temperatures for evaporation.

Claim 22, Wienand et al. discloses that the layer can be applied using PIAD (paragraph 26).

Claim 33 and 34: Giving the term "solid metal substrate" its broadest reasonable interpretation, a metal resistor of Wienand et al. can read on a solid metal substrate with a metallic surface as required by the claims.

Claims 35-37: These claims are rejected for the same reasons as claims 4, 6, and 7 above.

8. Claims 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Pliskin and further in view of US Patent 3953652 by Addiss et al., hereafter Addiss.

Lin in view of Pliskin teaches all the limitations of these claims as discussed above, but fail to disclose using electron beam to deposit the borosilicate glass. However, Addiss discloses electron beam is known in the art to effectively deposit films of borosilicate glass comprising aluminum oxide and alkali metal oxide components (Schotts 8329 glass) (example 1). Therefore it would have been obvious to one of ordinary skill in the art to modify Lin in view of Pliskin to use electron beam to deposit the borosilicate glass with a reasonable expectation of successfully providing a coating because Addiss discloses electron beam is known and suitable for forming borosilicate glass coatings. The selection of something based on its known suitability for its

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intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

9. Claims 2, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Batey and Pliskin and further in view of US Patent 3953652 by Addiss et al., hereafter Addiss.

Claim 2: Lin in view of Batey and Pliskin teach all the limitations of these claims as discussed above, but fail to disclose using electron beam to deposit the borosilicate glass. However, Addiss discloses electron beam is known in the art to effectively deposit films of borosilicate glass comprising aluminum oxide and alkali metal oxide components (Schotts 8329 glass) (example 1). Therefore it would have been obvious to one ordinary skill in the art to modify Lin in view of Pliskin to use electron beam to deposit the borosilicate glass with a reasonable expectation of successfully providing a coating because Addiss discloses electron beam is known and suitable for forming borosilicate glass coatings. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness.

Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945).

Claim 17: Addiss discloses heating the substrate improves the stability of the glass coating (Column 4, lines 53-55). Therefore it would have been obvious to modify Lin in view of Batey and Pliskin to heat the substrate to reap the benefits of a more stable coating.

Claim 18: Addiss discloses the pressure is a known result effective variable for depositing a stable coating (Column 3, line 62-Column 4, line 19) and therefore it would

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have been obvious to one of ordinary skill in the art to determine the optimum pressure in the process of Lin in view of Batey and Pliskin through routine experimentation to provide a stable coating.

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Batey, Pliskin and Addiss and further in view of Calhoun (US Patent No. 4,964,945).

Lin in view of Batey, Pliskin and Addiss teaches all of the features of claim 21 as discussed above including the desire to etch the surface after the deposition of the glass layer (column 2 lines 30-67). It does not teach to move the substrate during the evaporation-coating process. However, Calhoun et al. teaches that during evaporative coating such as e-beam evaporation it is desirable to continuously move the substrate during deposition as this deposits the material substantially on the surfaces parallel to the plane of the substrate surface and allows for the further step of etching the mask material after deposition (column 2 lines 30-45). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lin in view of Batey, Pliskin and Addiss to move the substrate during deposition as suggested by Calhoun with an expectation that it will allow for etching of the mask material after deposition.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-


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2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Turocy
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TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER